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A New Species of *Leptaulax* (Coleoptera, Passalidae) from Borneo

Yutaka Johki

Graduate School of Human Life Science, Showa Women's University,
Taishido 1–7, Setagaya, Tokyo, 154–8533 Japan

Kunio Araya

Graduate School of Social and Cultural Studies, Kyushu University,
Ropponmatsu 4–2–1, Chuo-ku, Fukuoka, 810–8560 Japan

and

Masahiro Kon

Graduate School of Environmental Science, The University of Shiga Prefecture,
Hassaka-cho 2500, Hikone, Shiga, 522–8533 Japan

Abstract A new species of *Leptaulax* is described from Sabah and Sarawak, Borneo under the name of *L. hidakai* sp. nov. The present new species is characterized by having mat elytral side, and is closely related to *L. beccarii* from Sumatra. However, it can be distinguished from *L. beccarii* by having the following characters: the body larger (24 mm or more), flatter (the ratio of prothorax thickness to pronotum width less than 0.49). A key is also provided to the *Leptaulax* species sharing the character, the side of elytron mat.

Most passalid species (Coleoptera, Passalidae) have entirely polished elytra except in the punctures of elytral grooves. However, some passalid species have the lateral grooves of the elytron mat (Gravely, 1918). The genus *Leptaulax* also includes five species having mat elytral grooves: i.e., *L. anna* Zang, *L. beccarii* Kuwert, *L. humerosus* Kuwert, *L. masayukii* Iwase and *L. schillhammeri* Iwase (Gravely, 1918; Iwase, 1997, 1998).

During the course of the entomological survey in Sabah, Borneo in 1981, the first author collected one beetle of the genus *Leptaulax* from Mamut, near Mt. Kinabalu. This beetle had the elytron with mat lateral grooves but appeared to differ from any known *Leptaulax* species sharing this character. Later we had opportunities to examine some additional specimens of this form from Sarawak as well as from Sabah. After a careful examination of these specimens, we concluded that this form is new to science. Thus, we are going to describe a new species of *Leptaulax* based on the specimens from Sabah and Sarawak.

In describing the present new species, we adopt the terminology of GRAVELY (1914) and IWASE (1996) for external morphology and LINDROTH (1957) for male genitalia.

Leptaulax hidakai JOHKI, ARAYA et KON, sp. nov.

(Figs. 1–4)

Description of holotype. Male. Length from apical margin of clypeus to apices of elytra 24.0 mm. Body flat, ratio of prothorax thickness to pronotum width 0.47, polished except side of elytron; head, pronotum, prosternum, elytra, tibiae and tarsi black; mesosternum, metasternum, abdominal sternites and coxae dark reddish-brown.

Outer margin of mandible with a strong angle near base, almost straight in middle portion anterior to outer angle, strongly curved inwards in distal portion; anterior lower tooth triangular, with apex rounded, slightly larger than lowest terminal tooth, the left one slightly larger than the right one. Labrum punctured and hairy, weakly asymmetrical, with left anterior angle slightly more prominent forwards than the right one, anterior margin concave, lateral margins weakly diverged anteriad. Inner marginal tubercle slightly larger than outer one, with apex rounded; distance between inner tubercles 1.8

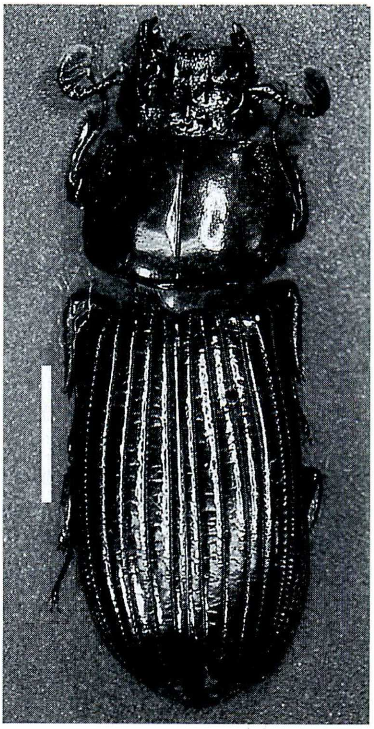


Fig. 1. Habitus of *Leptaulax hidakai* sp. nov., scale 5 mm.

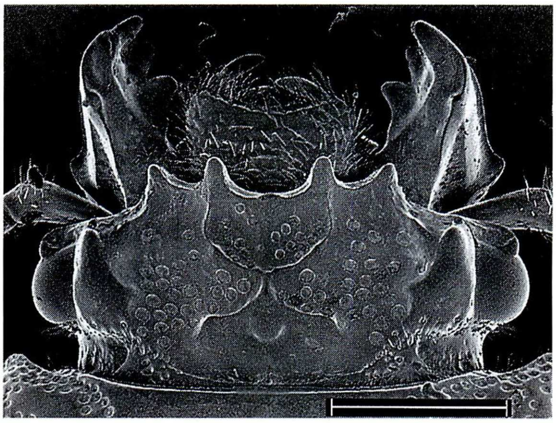


Fig. 2. Head of *Leptaulax hidakai* sp. nov., scale 2 mm.

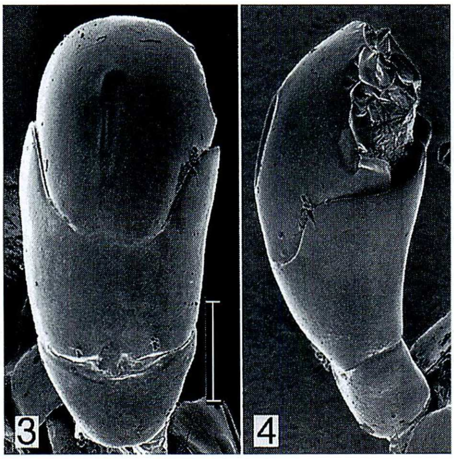
times as long as that between inner and outer ones; outer marginal tubercle triangular; median tubercle small and obtuse. Canthus weakly punctured on dorsal surface, with anterior angle rounded. Eye large, projecting laterally beyond canthus. Frontal area pentagonal, wider than long, hairless, with large annular punctures, median keel indistinct; depressed areas anterior to parietal ridge and between parietal and supraorbital ridges with large annular punctures; areas behind outer tubercle and behind parietal ridge impunctate; parietal ridge short, abruptly ending, not extending to supraorbital ridge; supraoccipital ridge indistinct and punctured in distal portion. Mentum smooth, polished and with J-shaped scar in central portion, with large hair-bearing punctures in lateral portion, rounded at anterior end of lateral portion, concave in posterior margin. Hypostomal process smooth, polished, without groove.

Pronotum flat, rectangular, densely punctured in lateral portion, with anterior angle weakly prominent forwards, posterior angle weakly rounded, median sulcus distinct, lateral scar shallow. Prosternum smooth and with a few hairs in middle portion; posterior plate of prosternum rugose and finely punctured in central portion, polished on posterior border. Mesothoracic episternum mat; mesosternum smooth and impunctate in central portion, with broad lateral scar, mat in scar. Central area of metasternum polished, impunctate, with shallow depression between mesocoxae; anterior intermediate area entirely punctured and hairy; posterior intermediate area punctured in inner and posterior portions, impunctate in outer portion close to lateral area; lateral area rugose, well defined, narrow, slightly widened posteriad.

Elytron flat on dorsal surface, slightly widened posteriad, hairy at humerus, mat in seventh to tenth grooves, with transverse punctures in lateral grooves.

Abdominal sternites entirely polished except for visible third and fourth sternites depressed and mat in anterior portion.

Lateral surface of front tibia flat, somewhat depressed, polished, with hair-bearing punctures; lateral surface of middle tibia polished except in punctures.



Figs. 3–4. Male genitalia of *Leptaulax hidakai* sp. nov., scale 500 μm; 3, ventral view; 4, right lateral view.

Penis large, rounded in distal end, longer than parameres in the middle of ventral side; parameres connected with each other both on dorsal and ventral sides, broadened towards distal end in lateral view, with lateral portion strongly extending forwards in ventral view; basal piece small, much shorter than parameres.

Variation. No sexual dimorphism is evident. Measurements for paratypes from Sabah: body length (mean±SD, range) 25.0 mm±0.87, 24.5–25.8 mm (N=3); the ratio of prothorax thickness to pronotum width (mean±SD, range) 0.476±0.004, 0.471–0.481.

Type series. Holotype: ♂, Mamut near Mt. Kinabalu, 1,000 m in alt., Sabah, 13–VIII–1981, Y. JOHKI leg. Paratypes: 1♀, Mt. Kinabalu, Park Headquarters, 1,300 m in alt., Sabah, 16–IV–1987, A. UEDA leg.; 1♀, Crocker Range, 1,600 m in alt., Sabah, 27–VIII–1987, M. KON leg.; 1♀, Sayap, Mt. Kinabalu, 1,000 m in alt., Sabah, 13–V–1992, H. SADAMORI leg.; 2 exs., Baram River, Sarawak, 4 & 24–X–1920, J. C. MOULTON leg. (in the collection of the Natural History Museum, London). The holotype is deposited in the collection of the Institute for Tropical Biology and Conservation, University Malaysia Sabah.

Etymology. The present new species is named in honor of Prof. Emeritus Toshitaka HIDAKA, who gave us opportunities to perform researches in Borneo.

Notes. The present new species resembles *Leptaulax beccarii* from Sumatra but differs from the latter in having the combination of the following characters: the body larger, 24 mm or more in length, whereas in *L. beccarii*, it is 22 mm or less; the prothorax flatter, the ratio of prothorax thickness to pronotum width less than 0.49, whereas in *L. beccarii*, it is more than 0.52.

The holotype and two paratypes from Sabah were collected by light.

Specimens compared. *Leptaulax anna*: 2♀♀, Ruteng, Flores, XII–1989. *L. bec-*

carii: 3 exs., Bukittinggi, W. Sumatra, 19–VI–1994, K. FUJITA leg.; 5 exs., Mt. Sibayak, N. Sumatra, 24–III–1997, Y. JOHKI leg.; 3 exs., Brastagi, N. Sumatra, 1998, K. FUJITA leg. *L. humerosus*: 1♀, Bukittinggi, W. Sumatra, II–1988; 1♂, Liwa, Lampung, Sumatra, IX–2002. *L. masayukii*: 1♂, Gunung Tambora, Sumbawa (holotype, in the collection of the National Science Museum (Nat. Hist.), Tokyo). *L. schillhammeri*: 1♂, Sibolangit, Sumatra Utara, 25–II–1990, H. SCHILLHAMMER leg. (holotype, in the collection of the Naturhistorisches Museum, Wien).

Key to the *Leptaulax* Species Sharing Mat Elytral Side

1. Hypostomal process with a longitudinal groove; 13 mm; Sumatra, Borneo........ .... *L. schillhammeri* IWASE.
— Hypostomal process without longitudinal groove .... 2.
2. Eye small, not projecting laterally beyond canthus; pronotum impunctate except in marginal groove and scar; Lesser Sunda species......................... 3.
— Eye large, projecting laterally beyond canthus; pronotum punctured in lateral portion; Greater Sunda species .... 4.
3. Body smaller, less than 27 mm in length; elytra not fused; 25–26 mm; Sumbawa, Flores.. *L. anna* ZANG.
— Body larger, 30 mm or more in length; elytra fused; 30–32 mm; Sumbawa, Flores.. .... *L. masayukii* IWASE.
4. Body smaller, 18 mm or less in length; external surface of middle tibia mat; anterior intermediate area of metasternum hairless; penis of male genitalia with spine at distal end; 16–18 mm; Sumatra, Malay Peninsula, Borneo .... *L. humerosus* KUWERT.
— Body larger, 19 mm or more in length; external surface of middle tibia polished except in punctures; anterior intermediate area of metasternum hairy; penis of male genitalia without spine at distal end................................. 5.
5. Body relatively convex, ratio of prothorax thickness to pronotum width more than 0.52; body length 22 mm or less; side of pronotum weakly punctured; 19–22 mm; Sumatra................................... *L. beccarii* KUWERT.
— Body flat, ratio of prothorax thickness to pronotum width less than 0.49; body length 24 mm or more; sides of pronotum densely punctured; 24–26 mm; Borneo .... *L. hidakai* sp. nov.

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要　約

常喜　豊・荒谷邦雄・近　雅博：ボルネオからのヒラタクロツヤムシ属の1新種．―― ボルネオのサバ州およびサラワク州から，クロツヤムシ科ヒラタクロツヤムシ属の1新種を *Leptaulax hidakai* sp. nov.と名付けて記載した．本種は鞘翅側面がつや消し状になる特徴を持ち，スマトラ産の*L. beccarii*に近縁である．しかし，体が大きく，24mm以上あることと，体がより扁平なこと(前胸の厚み／前胸背板幅が0.49未満）により*L. beccarii*から区別できる．ヒラタクロツヤムシ属のつや消し状の鞘翅側面をもつ種についての検索表を付した．

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